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Culture of Tubercle Bacillus.—The following method has been found satisfactory and reliable, because it produces a complete fluidification of the sputum, thus lessening the danger of contaminations. The formula used is a modified Jousset's liquid for inoscopy; pepsin 1 g., glycerin 10 cc., hydrochloric acid 15 cc., sodium fluoride 1 g., distilled water 1,000 cc. Mix equal volumes of sputum and solution and leave the mixture for four hours in the incubator at 37°C., shaking occasionally to facilitate homogenization. At the end of this period centrifuge, wash with sterile saline several times to remove the acid, and make cultures with the sediment upon Petragnani's or Loewenstein's media, or prepare for microscopical examination. The results are definitely superior to the sulfuric acid method. The culture method is preferable to animal inoculation, because it is less expensive, more reliable and more rapid. This method can be applied satisfactorily also to urine containing blood or albumin.—*Sputum Concentration for the Culture of Tubercle Bacillus, M. Gerundo, J. Lab. & Clin. Med., December, 1942, 28: 328.*—(*F. G. P.*)

Asphyxiation of Tubercle Bacilli.—This paper gives evidence for the validity of oxygen-starvation as a principle of killing harmful parasites, describing how even slow metabolizers, such as tubercle bacilli, may be deprived of power to cause disease. Previously it was shown that glycerine-agar cultures of avian and human tubercle bacilli lose infectivity when glass-sealed and incubated for a few weeks. The same was found to hold true for bovine tubercle bacilli (Ravenel strain). This loss of infectivity may well be due to oxygen starvation; however, the bacilli in such an experiment are exposed not only to the rarefaction of molecular oxygen they finally create in a sealed culture but also to accumulation of their end-products of metabolism, generated from glycerine-agar and air. It is, of course, impossible to separate a living organism completely from all its end-products, but in seeking to evaluate oxygen-starvation *per se* as a causative factor in death, it was thought desirable to separate an organism at least from the products it develops under conditions at first aerobic, as in a culture sealed without evacuation. The bacilli were subjected to an abrupt and severe deprival of oxygen by removing them from medium and placing them in a warm chamber saturated with water vapor, but deprived of other gases. From the results obtained it appears that various tubercle bacilli, human, bovine and avian, rigorously restricted from oxygen in the presence of moisture and kept at 38°C. are gradually killed. A fraction of the bacilli may retain viability for twenty-five days, but after a month of incubation the bacilli fail to grow either on artificial mediums or in tissues of the most highly susceptible hosts.—*The Death of Tubercle Bacilli Subjected to Oxygen Deprivation in the Presence of Moisture and of Warmth, T. S. Potter, J. Infect. Dis., November–December, 1942, 71: 220.*—(*F. G. P.*)

Tuberculosis Vaccine.—Many, if not all, parasites in the moist warm state die out when

their supply of a constituent element (oxygen) is persistently occluded. The following experiments demonstrate that tubercle bacilli so killed retain constituents of value for conferring protection against a tuberculous disease. The avian strain P4 was employed for vaccine production and also, in a virulent state, for test infection. The vaccine was prepared by growing the organsms for one month in the usual manner, then glass-sealed in culture, and incubated thereafter for two months at 38°C. Five immunizing injections of 13 mg. each (moist weight) were given subcutaneously in the sides of 33 rabbits at five-day intervals. Pigeons were injected to test the sterility of the vaccine and the virulence of the test bacilli was tested by injecting eight-week old chicks. In the main group, immune rabbits developed smaller lesions than the controls, and one-sixth as many lesions, and had, at fifteen months, approximately one-fourth the mortality of the controls attributable to tuberculous infection. Similar results were obtained also in another series carried on in a different year than the present experiment. The allergy developed by this vaccine in rabbits makes it possible to distinguish readily immune from unprepared animals by minute subcutaneous injections of vaccine. Some rabbits are harder to immunize than others and one good explanation for this has been offered on a hereditary basis (Lurie). Nevertheless it appears from the above experiment that virtually all rabbits in a large random selection may be at least partially protected. A unique feature of the tuberculous diseases, which may in no small measure be responsible for the relatively incomplete immunity obtained in these diseases, is the fact that whole tubercle bacilli, whether alive or dead, resist digestion in the living host for greater periods than most other bacteria. This slow progress of digestion is probably unfavorable to rapid evolution of the highest immunity. It may however favor long duration of such immunity.—*Asphyxiated Bacteria as a Vaccine in Tuberculosis, T. S. Potter, J. Infect. Dis., November–December, 1942, 71: 232.*—(*F. G. P.*)

Destruction of Acid-fastness.—There are several articles in the literature dealing with the subject of autolysis of the tubercle bacilli. Experimental evidence is presented suggesting the probable nature of the agent responsible for the autolytic process. Tubercle bacilli, strain H37, were washed free of culture medium, then treated with 95 per cent ethyl alcohol and shaken for one and one-half minutes. Ether was then added and the mixture allowed to remain at room temperature for two days. The bacilli were then dried on blotting paper and mixed with distilled water in an agate mortar until a heavy uniform suspension was obtained. One-tenth ml. of this suspension was transferred to a sterile tube containing 1 ml. of sterile distilled water and incubated at 37°C. After two days' incubation there is marked autolysis with loss of acid-fastness. The temperature for optimum activity was found to be in the vicinity of 37°C. Heating at 90°C. for ten minutes destroyed the autolytic agent. Maximum autolysis occurred in suspensions having pH values between 5.2 and 7.0. Iodine and formaldehyde completely inhibited the autolytic process. The autolytic agent apparently is not liberated when the microörganisms undergo autolysis. The relatively rapid loss of acid-fastness and destruction of morphology of the tubercle bacillus suggest that the autolytic agent or enzyme is endowed with considerable activity.—*The Destruction of Acid-fastness of the Tubercle Bacillus by an Autolytic Process, L. Baisden & D. Yegian, J. Bact., February, 1943, 45: 163.*—(*F. G. P.*)

Acid-alcohol-fast Bacillus.—The germ described is a nonpathogenic acid-alcohol-fast bacillus found in the bronchial discharges, saliva and urine of many clinically and roentgenologically normal persons in Cuba. The number of germs present varies according to individuals. The organism is morphologically and tinctorially similar to the tubercle bacillus but nonpathogenic for the guinea pig and the rabbit and apparently for human beings. Reports on similar organisms had previously been made by Cummins and Williams in 1933

and Dufourt in 1935. The author suggests the name of *Proactinomyces buccalis* for the germ he has found.—*Sobre un bacilo ácido-alcohol-resistente huésped normal del hombre en Cuba, M. Ortiz, Rev. de tuberc. (Habana), January–December, 1941, 5: 214.*—(*A. A. M.*)

Growth Stimulation by Charcoal.—In a series of three culture experiments the author demonstrated that the addition of 1 per cent blood charcoal to modified Petragnani's solid or Kirchner's liquid media enhanced the growth of human type tubercle bacillus. On the charcoal-containing medium 62 per cent of the cultures were positive after seven days' incubation at 37.5°C. This percentage of positive cultures steadily increased until 100 per cent positive cultures were attained in twenty-four days. On the control medium only 30 per cent of the cultures were positive after seven days' incubation and 100 per cent positive cultures were not attained until the thirty-first day. The author suggests that a possible explanation of this observation is that the acid-metabolic products of the growing cultures are absorbed by the blood charcoal.—*The Effect of Blood Charcoal on the Growth of the Tubercle Bacillus, E. Nassau, J. Path. & Bact., October, 1942, 54: 443.*—(*H. J. H.*)

Glycerol and Trehalose on Growth of Tubercle Bacilli.—Trehalose added to Long's synthetic medium did not support the growth of tubercle bacilli (A-21 human strain) as well as glycerol. Therefore, preformed trehalose, which is a constituent of tubercle bacilli, has no advantage over glycerol as a constituent of the culture medium.—*Comparison of Glycerol and Trehalose as Nutrients for the Growth of Tubercle Bacilli, H. J. Henderson, Proc. Soc. Exper. Biol. & Med., October, 1942, 51: 67.*—(*F. B. S.*)

Tubercle Bacillus Polysaccharide.—Polysaccharide, as detected by means of the precipitin reaction with immune horse serum, was not found in extracts of infected embryonic tissue, tuberculous tissue from monkeys, pleural fluid from tuberculous patients or sputum containing tubercle bacilli. If the pathological material was ground in sand for a long time (sixty to ninety minutes) or otherwise treated in a way that the tubercle bacilli present may be artificially disintegrated, then the serological test gave evidence of the presence of polysaccharide.—*Detection of Tubercle Bacillus Polysaccharides in Infected Material from Animals and Patients, J. T. Riordan, Proc. Soc. Exper. Biol. & Med., October, 1942, 51: 168.*—(*F. B. S.*)

Promin on Virulence of Tubercle Bacillus.—Prolonged cultivation of tubercle bacilli on a promin-containing medium attenuated their virulence and this reduction in virulence persisted after the strain was returned to control media. The change in virulence was demonstrated both by implantation on the chorio-allantoic membrane of the chick embryo as well as by inoculation into guinea pigs. The attenuating action of the promin was slight.—*The Attenuating Effect of Promin on Virulence of the Tubercle Bacillus, E. W. Emmart & M. I. Smith, Proc. Soc. Exper. Biol. & Med., December, 1942, 51: 320.*—(*F. B. S.*)

Sulfonamides and Tubercle Bacillus.—Compounds with a high antibacterial activity for *E. coli* had a correspondingly high activity against a rapidly growing, nonpathogenic strain of *M. tuberculosis*. There was a definite relationship between the acid dissociation constants of the sulfonamides and their activity for the two organisms. It was shown that p-aminobenzoic acid was able to inhibit the bacteriostatic effect of the sulfonamides on *M. tuberculosis*, in proportion to the relative bacteriostatic power of the individual sulfonamides.—*Nature of the Activity of Sulfonamides for the Tubercle Bacillus, R. J. Fitzgerald & W. H. Feinstone, Proc. Soc. Exper. Biol. & Med., January, 1943, 52: 27.*—(*F. B. S.*)

Action of Sulfones on Tubercle Bacilli.—Promin exerted comparatively slight inhibitory action on the growth of tubercle bacilli

(H37) in Steenken and Smith's medium until a concentration of 40 mg. per cent was attained. A concentration of only 1.6 mg. per cent of diaminodiphenyl sulfone to this medium caused the same degree of inhibition as the 40 mg. per cent of promin. The effect was greater in both cases on the avirulent (Ra) than on the virulent (Rv) H37 strain of tubercle bacillus. Addition of 5 mg. per cent of p-aminobenzoic acid to Proskauer and Beck's fluid medium showed a moderate degree of inhibition on the growth of the tubercle bacilli and when added in the presence of 40 mg. per cent of promin, it nearly checked the inhibitory effect of the promin.—*Action of Promin and Diamino-Diphenyl Sulfone upon Tubercle Bacilli; Antipromin Action of p-Aminobenzoic Acid, W. Steenken, Jr. & F. Heise, Proc. Soc. Exper. Biol. & Med., March, 1943, 52: 180.*—(*F. B. S.*)

Cleavage of Tubercle Phosphatide.—Since phosphatide is broken down by the enzyme, lecithinase, to fatty acids which inhibit further action of this enzyme before cleavage is complete, search was made for a compound that could require the same enzymes for its breakdown but which would yield fatty acids not inhibitory to the function of the enzymes. The sodium salt of the cinnamoyl glyerol phosphatidic acid (SCG) was found to fulfil the preliminary requirements. Six rabbits receiving intravenous injections of the SCG compound intravenously and then phosphatide intraperitoneally showed essentially no reaction on the omenta in 3 of the rabbits and in the other 3, very much less reaction than the 6 control rabbits receiving only phosphatide.—*Effect of Sodium Salt of Cinnamoyl Glycerol Phosphatidic Acid on Lesions Produced by Tubercle Phosphatide, B. Gerstl & R. Tennant, Proc. Soc. Exper. Biol. & Med., February, 1943, 52: 154.*—(*F. B. S.*)

Benzophenone on Human Tubercle Bacilli.—Various derivatives of benzophenone inhibited the growth of a quick growing avirulent strain of tubercle bacilli in a liquid synthetic asparagin medium, containing glycerin; 2,4′-dichlorobenzophenone was bacteriostatic in high dilution, ortho- and para-chlorobenzophenone to a lesser degree. The para-methyl and methoxy derivatives also inhibited growth. All of the di-para derivatives (amino, methyl, methoxy, chloro) were inferior to the mono-para compounds. Substitution of the hydrogen atoms of the amino groups with alkyl groups did not increase the effect. Benzil, benzanilide and o-benzoyl benzoic acid did not inhibit in the lowest dilution. The sulfoxide and sulfone derivatives, including promin, were low in bacteriostatic action; 2,4′-dichlorobenzophenone also inhibited a virulent strain of tubercle bacilli in high dilution in liquid media, but not on solid media.—*Effect of Benzophenone and Allied Compounds on Human Tubercle Bacilli in vitro, B. L. Freedlander, Proc. Soc. Exper. Biol. & Med., October, 1942, 51: 153.*—(*F. B. S.*)

Tuberculin Tests in Guinea Pigs.—In guinea pigs the Old Tuberculin used in these experiments seemed to be more sensitive, more specific, less antigenic and less often lethal, as well as less expensive than the PPD.—*Tuberculin Tests in Guinea Pigs with Purified Protein Derivative, E. Bogen, Proc. Soc. Exper. Biol. & Med., November, 1942, 51: 221.*—(*F. B. S.*)

Serum Polysaccharide in Tuberculosis.—Analyses, by means of the carbazole reaction, for polysaccharide in the albumin and gamma globulin fractions isolated from sera by means of electrophoresis, showed both to be high in cases of far advanced tuberculosis. A yellowish pink color is produced by the carbazole reagent with these serum fractions, in contrast to a bright pink with pure glucose. The same color is also produced by pure tuberculin polysaccharide. The composition of this polysaccharide is somewhat similar to that of a polysaccharide isolated by previous workers from normal serum; the former consisting of mannose, galactose and glucosamine. The polysaccharide content of a series of sera from normal, minimal, moderately advanced, far

advanced and terminal tuberculous cases was determined by subtracting the amount of free glucose from total carbohydrate. The results showed that the true polysaccharide content of the serum increased during tuberculosis in proportion to the extent of the disease. Correlation of the polysaccharide values with the clinical course of the disease was in many cases highly suggestive.—*Correlation of Extent of Tuberculosis with Amount of Polysaccharide in the Serum, Florence B. Seibert, J. W. Nelson & Mabel V. Seibert, Proc. Soc. Exper. Biol. & Med., March, 1943, 52: 219.*—(*F. B. S.*)

Asthma.—Asthma is defined as the reaction of an overexcitable bronchial system, including the medullary centre, the vagal nerve-endings and the bronchial musculature and mucosa, to blood-borne irritants and to reflex and psychic stimuli. The irritable bronchial system, which constitutes the asthma diathesis, is a congenital and often inherited constitutional abnormality. It results in the vagal constituent of the bronchial nervous system being predominant over its sympathetic partner. In the presence of this diathesis certain allergens and reflex and psychic stimuli which have no effect on normal individuals, give rise to spasm of the bronchial muscles, often associated with hypersecretion of the bronchial mucous glands, together with congestion of the bronchi, which is the natural accompaniment of their excessive functional activity. The constitutional factor shows remarkable variations at different times. An asthmatic may indulge heavily in food, take unlimited exercise, *etc.* and yet be free for many weeks of attacks which circumstances on other occasions would cause severe attacks. An individual who is hypersensitive to one or more proteins does not suffer from asthma unless he has the asthma diathesis. In fact, many asthmatics are not allergic at all, their attacks being caused by reflex and psychic stimuli. The respiratory tract is the main reflex source of asthma. Thus, mouth-breathing should be avoided and upper respiratory infections treated promptly and adequately. A distended stomach and a distended rectum may both produce reflex attacks of asthma and very often self-induced vomiting and adequate defecation will give immediate relief. Psychological factors are especially important in children. The parents should not be overindulgent and show over-anxiety. The author summarizes all sorts of treatments ranging from inhalation therapy to various types of injections by saying that the 75 to 80 per cent good results obtained in all are due to the power of suggestion transmitted from an eager physician to a believing patient. He stresses the importance of expiratory exercises between attacks and the correction of postural errors. The asthmatic child should lead a normal, full life, including all sorts of sports. In the specific treatment the author advises small doses of iodides to loosen expectoration, caffeine and theophylline to abort and often prevent attacks and the judicious use of adequate adrenalin during attacks. For status asthmaticus he urges the continuous injection of adrenalin, one minim is injected every fifteen, thirty or sixty seconds, according to the patient's reaction, the rate being adjusted so as to cause no unpleasant symptoms and no acceleration of the pulse. The injections are continued for half an hour or more until relief occurs.—*Asthma in Childhood, A. Hurst, Brit. M. J., April 3, 1943, 1: 403.*—(*D. H. C.*)

Asthma.—The psychological factor in asthmatic children is stressed. It is urged that in every case psychological treatment should supplement physical treatment at the time when the latter is being given and not as an afterthought. In most cases the physician in charge of the case should carry out the psychological treatment rather than a psychiatrist. The author believes the asthmatic child to be a special personality type characterized by the following features: (*1*) he has an intelligence much above the average, (*2*) he is irritable and aggressive and is quick to respond, (*3*) he is overanxious, insecure, unselfconfident. He is a type of child who makes more demands on his parents, particularly his mother, than almost any other. To

fulfil his own personality needs he both dominates and demands protection from his parents. In a study by trained psychologists of more than 50 of these children the average intelligence quotient was 108.8 as contrasted with an average of 90 for a comparable sample of the population suffering from other conditions in a large clinic. In a further study of 30 asthmatic children the following impressions were recorded: 23 were described as nervous; 22 as restless, active, excitable; 21 as overanxious, un-selfconfident, afraid. From a corresponding group of children referred for neurotic difficulties or for behaviour disorders it was found that 6 were described as restless, excitable; 4 as aggressive, domineering and 6 as overanxious and afraid. The author believes that in the vast majority of cases the asthma attack is a sign of the conflict, its general resultant, in the same way that palpitations are the general result of fear. The parent is the one person best able to modify and direct the child's personality development. The physician's rôle should be that of guide to the parents.—*Psychological Factors in Asthma, C. H. Rogerson, Brit. M. J., April 3, 1943, 1: 406.*—(*D. H. C.*)

Asbestosis and Pulmonary Tuberculosis.—The case history of a forty-four year old man is given who had worked for twenty years in an asbestos mill. After ten years he had developed productive cough which increased gradually. Only a short time prior to his admission to the hospital the patient started to run fever and had pains in his chest. The diagnosis of ulcero-fibrous tuberculosis and asbestosis was made. Tubercle bacilli and asbestos bodies were found in the sputum. The autopsy confirmed the clinical diagnosis. Besides the ulcero-fibrous tuberculosis, diffuse peribronchial and perialveolar sclerosis with numerous asbestos bodies was seen. Radiologically and pathologically it could not be decided whether the tuberculosis preceded or followed the asbestosis. However, it is believed that the first symptoms of asbestosis appeared ten years before the symptoms of tuberculosis.—*Amiantose et tuberculose pulmonaires, R. Desmeules & M. Giroux, Laval méd., March, 1943, 8: 227.*—(*G. C. L.*)

Pulmonary Asbestosis.—The radiological picture of pulmonary asbestosis is not characteristic; it is usually similar to that of tuberculous fibrosis. The diagnosis is, therefore, often made only after asbestos bodies have been found in the sputum. Asbestos fibres may be seen in sputa of individuals who do not suffer from asbestosis; asbestos bodies are due to a pathological tissue reaction. Microscopical examination of lungs of patients who have died from an intercurrent disease may show asbestosis, which had not been found on X-ray examination. It cannot be decided whether asbestosis favors the development of tuberculosis or whether pulmonary tuberculosis favors the development of pulmonary asbestosis. The case history of a forty-two year old man with asbestosis without tuberculosis is given. The patient had been working in the asbestos industry for eighteen years. For two years the patient had been suffering from increasing cough, expectoration and dyspnoea. Roentgenological examination showed mottling of both lungs. Sputa and gastric examinations were negative for tubercle bacilli. Asbestos bodies were found in the sputum.—*Amiantose pulmonaire, L. Rousseau, Laval méd., March, 1943, 8: 233.*—(*G. C. L.*)

Asbestosis Bodies.—The "curious bodies" found in the sputum of patients suffering from pulmonary asbestosis usually measure 24 to 50 μ by 12 to 24 μ, but can be as large as 250 μ. They consist of a central fibre of asbestos which is covered by a golden-yellow substance containing iron. Rabbits, guinea pigs and one dog were exposed to inhalation of asbestos dust. Asbestosis did not develop in the rabbits nor in the dog. The guinea pigs showed, after several weeks, macrophages with asbestos fibres in their alveoli. Erythrocytes appeared in the alveoli and haemoglobin derivatives containing iron could be found on the asbestos fibres two to three months after the beginning of the inhalation of asbestos

dust. When a suspension of asbestos in olive oil was injected subcutaneously or into the testicles of guinea pigs no asbestos bodies were formed. However, if first 1 cc. of blood was injected and then the asbestos dust through the same needle, asbestos bodies could be found one month later. The presence of asbestos bodies in the sputum is believed to be a definite sign of pulmonary asbestosis.—*Amiantose expérimentale: Valeur pathognomique du "corps d'amiante," M. Giroux, Laval méd., March, 1943, 8: 239.*—(*G. C. L.*)

Asbestosis and Pulmonary Tuberculosis.—Asbestosis is an occupational disease of the lungs due to inhalation of asbestos dust. It is characterized by a transformation of the normal lung tissue into fibrous tissue. Symptoms appear usually five to seven years after the beginning of the exposure. The presence of asbestos bodies in the sputum is a proof for the existence of pulmonary asbestosis. Both asbestosis and tuberculosis were seen in 8 workers exposed to asbestos dust for five to twenty years. Three of these cases are described, in whom the asbestosis was masked by tuberculosis and where the history and the presence of the asbestos bodies permitted the diagnosis.—*Amiantose incipiente chez des tuberculeux pulmonaires, R. Desmeules, L. Rousseau, M. Giroux & P. Richard, Laval méd., March, 1943, 8: 217.*—(*G. C. L.*)

Atelectasis following Pneumonia in Children.—During 1939, 135 children with the clinical and roentgenological findings of pneumonia were examined in the Department of Roentgenology of The Infants' and The Children's Hospitals in Boston. Twenty-six instances (19 per cent) of atelectasis were observed clinically. All of the latter patients had the signs and symptoms of pneumonia. Pneumococci were cultured from the throats of 15 patients, haemolytic streptococci from 2, and *Haemophilus influenzae* from one. Eight patients had no cultures taken. Seventeen patients were under two years of age. The duration of acute illness at the time of the first roentgenological examination varied from two days to two weeks with an average illness of five days. In addition to increased density of the involved lung present in all cases, three roentgenological signs of atelectasis were observed: (*1*) displacement of the heart and mediastinum toward the area of increased density, sometimes accompanied by narrowing of the interspaces between the ribs, elevation of the diaphragm on the involved side and emphysema of adjacent portions of the lungs; these findings were observed in the postero-anterior view in 9 patients (35 per cent); (*2*) displacement and curving of an interlobar septum toward the area of increased density; this sign was observed in 24 patients, usually on the lateral film (92 per cent); (*3*) close spacing of large bronchovascular markings to form a curvilinear triangle of increased density within a lobe, with the base of the triangle at the periphery, its apex directed toward the hilum, and any curve of its sides toward the inner aspect of the triangle. This triangular shadow within a lobe was observed in 6 patients (23 per cent) and was interpreted as atelectasis involving one or more bronchopulmonary segments of the lobe. The curved side of the triangle was usually formed by a subjacent interlobar septum. Treatment of the 26 patients was symptomatic, accompanied by chemotherapy in 10 instances. Clinical recovery was uneventful with the exception of 2 patients, one of whom required bronchoscopic aspiration of retained secretions and another who developed empyema. Of the remaining 24 patients, 20 were followed both clinically and roentgenologically to complete clearing of the pneumonia and the atelectasis. Disappearance of the atelectasis usually took place in from one to two weeks. Bronchoscopy may be necessary if the atelectasis persists for longer than two or three weeks. Atelectasis following pneumonia could not be distinguished roentgenologically from that seen in the presence of foreign body or bronchiectasis. All cases of atelectasis should be followed roentgenologically to complete clearing because of the ever present possibility of foreign body or bronchiectasis.—*Atelectasis following Pneumonia in Children, G. M.*

Wyatt, Am. J. Roentgenol., June, 1942, 47: 864.—(W. H. M.)

Surgical Treatment of Bronchiectasis.—Among over 200 patients operated on in the Rio General Policlinic for pulmonary abscesses or displasias, in only 3 there was no question as to the diagnosis of single giant bronchiectasis. A different surgical method was used in each of the 3, and the result was also different. The first patient, a Jewish girl, fourteen years old, suffered from a chronic suppurative process with foetid and purulent sputum with acute attacks followed by large vomicae. Tubercle bacilli were never found, although the sputum showed an abundant and varied bacterial flora. A diagnosis of suppurative aerial cyst of the lung was made. The operation consisted in a direct median lobectomy. A tear occurred in the upper lobe because of the dense adhesions to the removed lobe. As a result apparently of this lesion a transient gas embolus developed in the brain. Postoperative shock proved serious and lasted for eight hours. The recovery afterwards seemed rapid and an X-ray examination suggested a favorable outcome. However, fourteen days afterwards, cyanosis, rapid pulse and signs of heart failure developed, and the patient died sixteen days after operation. The necropsy showed pulmonary thrombosis and a dilated right heart. The second patient was a man, thirty-four years old, who three months before had an acute pneumonia attack, and since then an abundant purulent sputum which proved also negative for tubercle bacilli. A clinical and X-ray diagnosis of circumscribed abscess of the lung was made and operation advised. Graham's pneumonectomy with actual cautery was used to gain access to the cavity and, after removing a large sequestrum, a giant bilocular bronchiectasis was identified. All the internal surfaces were cauterized. Postoperative recovery proceeded uneventfully. In forty days the patient had gained 25 pounds and is now working as a freight handler. The third patient was an Italian Sister of Mercy, thirty-six years old, who after having influenza in 1939 discharged for two days bloody sputum. A search for tubercle bacilli proved negative and recovery followed. After discharge, following an operation for acute appendicitis in October, 1941, an acute pneumopathy developed. This continued for twenty-two days with high fever, raving and blood-stained sputum, sulfa drugs having brought no improvement. Then a large vomica with offensive pus developed, and the fever subsided. Discharge of sputum and temperature fluctuation continued for about three and one-half months. General treatment, sulfa drugs and transfusions were used. An acute attack in January, 1942 suggested the need of more radical treatment for postappendectomy embolic abscess of the lung. No tubercle bacilli were found. After an intensive five-day sulfa therapy the seventh, eighth and ninth ribs were removed. Two cavities were located, drained and cauterized, after removing their walls. Twenty days after operation the patient was well on the way to recovery.—*Tratamiento quirúrgico de las bronquiectasias gigantes aisladas, A. Amorim, Rev. mex. de tuberc., May–June, 1942, 4: 393.—(A. A. M.)*

Syphilitic Gumma of Lung.—A case of tertiary syphilis of the lung in a patient thirty-four years old, through a diagnostic error caused by the presence of a solid growth, was made the subject of an exploratory thoracotomy. A biopsy and the success of the postoperative treatment for syphilis confirmed the modified diagnosis. Recovery was complete. In all cases with a history of syphilis it is advisable to keep this fact in mind whenever the X-ray films show a rounded image in the lungs, even though the Wassermann test may be negative and treatment for syphilis has been protracted. Pulmonary syphilis may assume the form of gummata, sclerosis or pneumonitis. This was a case of gumma. X-ray films by themselves are inadequate to differentiate such cases from other growths, such as those due to hydatid cysts.—*Goma sifilítico del pulmón, O. A. Vaccarezza, Rev. argent. de tuberc., October–December, 1942, 8: 233.—(A. A. M.)*

Amoebic Hepato-pulmonary Syndrome.—In Mexico the spread of amoebic infestation is such that the majority of the people in the lower regions in the country must be considered as carriers of cysts. This fact must be kept in mind by all physicians. Ochsner and Baker's New Orleans series show how high the percentages of pulmonary involvement may be. Since Schuber in 1910, various authors have related to amoebiasis certain pleuro-pulmonary complications. In some cases tuberculosis is suspected because of the presence of fever and cough, the latter often nonproductive. The tell-tale characteristic chocolate sputum is far from being a regular finding and this sign should not be depended upon to make an early diagnosis. One of the most pathognomonic signs consists in the contrast between the few physical and even radiological findings and the general prostration and loss of weight leading into cachexia. Fluoroscopy contributes some typical details, among them the immobilization of the right diaphragmatic dome and rising and density of the liver. The blood picture also corresponds to amoebic hepatitis. The absence of tubercle bacilli helps and, finally, the prompt success of emetin confirms the diagnosis. Five such cases are reported, 4 of them from the Mexican capital; all 4 were very poor people.—*El síndrome hepato-pulmonar amibiano, D. G. Alarcón, Rev. mex. de tuberc., November–December, 1942, 4: 532.*—(*A. A. M.*)

Echinococcus Cyst of Lung.—Hydatid cyst of the lung is rather common in Argentina and the writer himself has operated 12 cases with one death since January, 1939 in his service in the Central Army Hospital in Buenos Aires. Surgical treatment for pulmonary cysts was introduced in Argentina by Posadas and improved first by his pupil Arce and then by Arce's pupil, Ivanissevich. The illustrations used in this paper are all taken from Ivanissevich's reports. The usual clinical symptoms are cough, abundant sputum, pain in the chest or haemoptysis. Physical examination may prove negative or show such signs as are to be expected of any disease of the chest. The only definite pathognomonic sign is the finding of hydatid elements in the sputum. The condition may remain latent for years and its presence may be disclosed during a routine mass examination of draftees or school children. X-ray films are most useful in diagnosis since they show the presence of a growth in the thoracic cavities and centre it in a certain field. The shadow, however, is nonspecific unless complications have developed. Nevertheless, in a country such as Argentine, the X-ray image will place the physician on guard when the patient is from an infected area. The suspicions become almost a certainty when the following signs are also present: pneumoperivesicular air bubbles (as reported by Morquio, Bonaba and Soto) caused by the escape of air through a small bronchial tube which separates the adventitia from the sac; double arch (as reported by Ivanissevich) formed by a partial discharge of the air in the cyst which separates the adventitia from the cyst and also makes its way into the sac; and *camalote* (as named by Lagos-García and Seges from its floating water-lily shape) consisting in a rounded air-water bubble formed by the partial emptying of the cyst. Treatment is essentially surgical and will be guided by the infected or noninfected nature of the growth. The infected type is treated like any other suppurative process of the lung. In the noninfected cases it must be determined whether pleural adhesions are present in the location chosen for the opening. An induced pneumothorax will facilitate the X-ray examination in different positions to determine the location and extent of the adhesions. (Arce prefers an advanced pneumothorax consisting in introducing increasing amounts of air on every other day beginning six days before the operation, and checking with the X-ray films the production of the collapse.) The author prefers the one-step operation to Lamas and Mondino's two-step method. He also uses Arce's vaginal speculum to inspect the operative wound and remove any remains of membranes and Posada's adventitial marsupialization. Possible postoperative complications are pyopneumothorax, subcutaneous em-

physema, haemorrhagic and broncho-cutaneous fistulae. The one death in the writer's series was from recurrent haemoptysis in the late postoperative period. Multiple cysts were present and only one had to be removed.—*Quiste hidatídico del pulmón, B. Pérez, Bol. Asoc. méd. de Puerto Rico, April, 1943, p. 129.*—(*A. A. M.*)

Echinococcus Abscess in Rib.—A hydatid cyst involving the first rib cast an X-ray shadow resembling a hydatid cyst of the lung. Clinical findings corrected the diagnosis, as they showed calcification of the adventitia of the cyst, suggesting an osseous origin, and pressure on the stellate ganglion of the sympathetic nerve causing a Claude Bernard-Horner syndrome and the involvement of the lower brachial plexus producing pain which radiated to the homolateral upper extremity. In a previous case the senior author had already suggested the presence of an extrapulmonary process when such signs were found. The conclusion in the second case was borne out by the multivesicular contents of the process; the absence of a hydatid membrane, and the destruction of the first rib as shown on operation.—*Hidatidosis de la primera costilla con sombra quística del apex pulmonar y síndrome de Claudio Bernard Horner, R. A. Piaggio Blanco, J. Dighiero & H. Malozetti, Rev. de tuberc. d. Uruguay, 1942, 10: 430.*—(*A. A. M.*)

Carcinoma of Lung.—In the twenty-one months between January 1, 1941 and October 1, 1942, 31 cases of primary carcinoma of the lung have been observed in the Naval Hospital in Philadelphia; in 16 other cases the diagnosis was established clinically but microscopical proof was lacking. There is a distinct increase in the number of cases of carcinoma of the lung admitted to the Philadelphia Naval Hospital. In the present series of cases cough and expectoration of sputum were present in all but one of the patients. In 75 per cent of the cases there was chest pain and haemoptysis occurred in 60 per cent. Pleural effusion was found in 25 per cent of the patients. The most important roentgenological finding was atelectasis distal to the tumor and this was observed in 65 per cent of the patients. A single circumscribed lesion in the periphery of the lung was seen in 15 per cent. Bronchoscopic examinations were done in all but 6 of the proved cases and in all of the suspected cases. Positive biopsies were obtained in 14 of the bronchoscoped patients. Bronchography with iodized oil was used in only 12 cases and cannot of itself establish a definite diagnosis. Tumor cells were found in the pleural fluid of only one of the patients with effusion. Aspiration biopsy was not used in any instance. Exploratory thoracotomy established the diagnosis in 2 cases and in 3 the diagnosis was made by bioptic examination of a distal metastasis. In 11 cases the diagnosis was finally established by autopsy, although in all of these the correct diagnosis had previously been made. Among the 31 cases, 16 were squamous cell carcinoma, 4 adenocarcinoma and 11 undifferentiated or mixed types. Roentgen therapy was used in 16 inoperable cases and in about half of these there was marked relief of symptoms but none was cured. Seven of the patients were considered suitable for exploratory thoracotomy. One of these refused to be operated upon and the other 6 all proved to be inoperable at the time of exploration. Of the 31 proved cases, 22 have died, 8 are living and have definite evidence of metastasis, and one remains untraced.—*Carcinoma of the Lung: A Review of 31 Proved Cases at the Philadelphia Naval Hospital, F. Fetter, Ann. Int. Med., June, 1943, 18: 978.*—(*A. A. E.*)

Bronchogenic Carcinoma in Child.—The author reports a case of proven primary carcinoma of the lung in a child four years and four months old. A review of the literature reveals only 3 cases in the decade 0 to ten as having been reported. The case reported is that of a girl four years and four months old, who was admitted as an emergency case with an eleven day history of unproductive cough and a week's history of attacks of breathlessness in the morning. She was found to be pale,

cyanotic and markedly dyspnoeic. A right pleural effusion was found on physical examination and confirmed by radiograph. Chest aspiration revealed deeply blood-stained fluid, microscopical examination of which revealed some cells with mitotic figures suggestive of malignancy. Thoracoscopy revealed numerous round, smooth, pink nodules of tissue widely distributed over the parietal pleura; biopsy of one of these nodules revealed an infiltrating anaplastic carcinoma with the histological features of a bronchial carcinoma. The course was progressively downhill with death occurring two months after admission. Postmortem examination confirmed the diagnosis of primary bronchial carcinoma of the right lung, anaplastic type, with metastases to the pleura, right bronchial, all the mediastinal, right supraclavicular, right axillary and coeliac axis lymph nodes as well as to the right adrenal gland.—*Primary Bronchial Carcinoma at the Age of 4 Years 4 Months, C. E. Field, & J. P. Quilliam, Brit. M. J., June 5, 1943, 1: 691.*—(*D. H. C.*)

Pulmonary Lesions in Cystic Fibrosis of Pancreas.—Cystic fibrosis of the pancreas is not an unusual disease, but its diagnosis is, the reason being that the associated pathological changes involving the lungs overshadow the fundamental pathological process in the pancreas and offer an obvious, although incorrect explanation of the illness and death of the patient. In this paper attention is called to pulmonary changes as revealed by X-ray examination which suggest the possibility of cystic fibrosis of the pancreas. In a series reported by Blackfan and May, the average age of onset was two months; the average age of death was eight months. While the prognosis may appear hopeless from the cases so far reported, it must be remembered that the extent of involvement of the pancreas may vary and in one instance reported, therapeutic procedures appeared to be fairly satisfactory. Thus the suggestion of the possibility of the disease from X-ray examination of the chest may be of clinical value. "The hilar shadows are increased in density, with loss of definition and prolonged outward into a surrounding mottling which gradually diminishes toward the periphery of the lungs. The changes are bilateral and symmetrically distributed about the roots and adjacent parenchyma." Atelectasis was present in one case. In contrast to bronchopneumonia, the changes in the upper lung fields are quite as marked as those at the bases. If repeated examinations are made the chronicity of the lesion is striking and may lead to an erroneous diagnosis of tuberculosis. The pathological changes consist essentially of purulent bronchitis with bronchiectasis and bronchiectatic abscess formation and surrounding pneumonitis. There may also be seen on some chest films evidences of disturbed intestinal motility such as fluid level and dilated loops of small intestine.—*Cystic Fibrosis of the Pancreas with Observations on the Roentgen Appearance of the Associated Pulmonary Lesions, C. J. Attwood & W. H. Sargent, Radiology, October, 1942, 39: 417.*—(*G. F. M.*)

Toxoplasmosis.—Toxoplasmosis is a disease caused by a protozoan, the toxoplasma. In infants it produces meningo-encephalitis. Two cases, occurring in adults, were reported in 1941 by Pinkerton and Henderson. The clinical picture resembled Rocky Mountain spotted fever. Chills or chilly sensations followed by fever and symptoms of acute pneumonia were the most prominent manifestations in both cases. A generalized cutaneous eruption was present for a few days. In both cases there was a history of previous tick bite. The chest roentgenograms of the 2 patients were reviewed by the author. The early findings are those seen in pulmonary congestion with pulmonary oedema, but without cardiac enlargement. Any disease process of the lung which produces primary interstitial involvement may give a similar roentgen picture, as for instance, aspiration of irritating material, such as kerosene or a less irritating substance, such as water in drowning. The lesion which might nearly produce a similar roentgen picture would be acute oedema of the

lungs from water-logging caused by excessive forcing of fluids in postoperative cases. At a more advanced stage, the accentuated lung markings become overshadowed by the increasing interstitial infiltration and alveolar exudation. The composite picture is one of conglomerate areas of infiltration crowding upon each other to give the appearance of irregular blotchy consolidation of the lung with the greatest involvement in the lower lobes. The roentgen picture might be readily simulated by any of the atypical pneumonias, mycotic infections or extreme oedema from any other cause. Toxoplasmosis, however, is acute and the symptoms are graver. In both cases, there were high fever, extreme prostration, cyanosis and dyspnoea, and the patients died from respiratory failure. Pathologically the essential findings are those of an acute interstitial pneumonitis with associated pulmonary congestion and oedema. The gelatinous appearing exudate almost devoid of inflammatory cells, the cuboidal alveolar epithelium, the thick hyaline membrane lining the alveoli are also present in influenzal or virus pneumonia. Similar pathological and/or roentgenological pictures are present in such virus diseases as psittacosis and American Q-fever which may be more prevalent than believed. Within the last few years numerous instances of atypical pneumonic infections have been published. In one case reported in 1940 by Weir and Horsfall, a virus was recovered from the sputum. It might be better, therefore, to follow the suggestion of Longcope, referring to all atypical pneumonic processes as "bronchopneumonia of unknown aetiology (variety X)" until a more conclusive method of differentiation is effected.—*Roentgen Manifestations of Adult Toxoplasmosis, L. R. Sante, Am. J. Roentgenol., June, 1942, 47: 825.*—(*W. H. M.*)

Chest Injuries.—After two years of experience in routine postmortem examination of battle casualties and civilian casualties, the author lays claim to wide and varied material. He defines a closed injury to the chest as one in which the skin and subcutaneous tissue were intact or that, if these were pierced, the course of the missile had been such as to leave the pleura intact, so that the pleural space had no contact with the outside air. The cases are divided into two main categories—those due to direct violence to the chest and those in which the injury to the thoracic viscera is indirect, a result of injury elsewhere in the body. The former group includes: (*a*) lacerations, (*b*) contusions and (*c*) blast injuries (pulmonary concussions). The latter group is exemplified by fat embolism. Laceration of the great vessels is rare. Laceration of the lung is rarely severe and seldom causes death in itself; a haematoma forms round the actual tear but, owing to collapse of the lung tissue, haemorrhage soon stops. The complications of lacerations are the serious factors and they are: (*1*) pneumohaemothorax, (*2*) compression or collapse of the lung, (*3*) infection. The most serious of these is pneumohaemothorax and it is the bleeding that proves fatal. There are two possible sources of origin for blood in the pleural spaces: (*1*) bleeding from the intercostal and mammary vessels, which, being systemic, may be very profuse and difficult to stop and (*2*) bleeding from the pulmonary vessels at the site of laceration; this is rarely severe or fatal in itself, since the arterial pressure is one-sixth that of the pressure in the aorta and the pressure in the veins is near the zero level. The blood acts as an irritant to the pleural surfaces bringing about an outpouring of fluid rich in protein accompanied by constant fever and mild dehydration. The blood rarely clots in haemothorax. The lung compression in cases of laceration with or without haemothorax may not reach clinical significance until twelve to eighteen hours after the injury at which time signs and symptoms of pressure come about. Even with the introduction of sulphonamides, infection is still the dread of the lung surgeon. It is rare for the pleura to be infected until later in the course, but pneumonic changes may set in early; these have no special pathological features. Contussions occur as a result of direct violence and are present mainly in younger persons whose ribs

are still elastic. Injuries to the heart are commoner than has been supposed and very often overlooked. Trauma of the heart may cause contusion of the myocardium, traumatic pericarditis or rupture of the valves or the great vessels. Pulmonary contussions caused by direct trauma may have the same appearance as those caused by pulmonary concussion as seen in blast injuries. Blast injuries have provided one of the most interesting studies during the present war. The lung picture is usually one of scattered areas of haemorrhage throughout the whole organ, deep as well as subpleural. There is no suggestion of consolidation and the general feel of the lung is rubbery. Emphysema and subpleural bullae can be seen macroscopically. The histological picture in patients dying early is that of widespread congestion, often with intraälveolar haemorrhage to a marked extent. The alveoli may be ruptured and a mild oedema may be present even in the early stages. There is no definite relation between the size of the haemorrhages and the survival period, but most of the bleeding would appear to take place almost at once. Later, fibrin formation and round cell infiltration occur. The subsequent course of these cases is beset with three dangers: (*1*) development of pneumothorax, (*2*) acute oedema and heart failure and (*3*) infection, i.e. bronchopneumonia. Finally the author reveals that reported cases of pulmonary fat embolism have rapidly increased in recent years owing to wider recognition of the condition. It is usually a sequel to fracture of a long bone, especially the femur, the fat gaining entrance to the blood stream and being carried to the lung, thence it passes into the general circulation, causing pathological changes in the brain, kidneys and heart muscle. The main macroscopical lung findings are haemorrhage and mild oedema. Extreme congestion with small areas of haemorrhage are noted on cutting into the lung surface. Microscopically, fat can be demonstrated in fresh preparations using special technique.—*The Pathology of Closed Injuries of the Chest, J. V. Wilson, Brit. M. J., April 17, 1943, 1: 470.*—(*D. H. C.*)

Absence of Hilar Shadow.—Absence of the hilar shadow in the roentgenogram is produced by the absence or marked underdevelopment of the right and left pulmonary artery. If one large solitary vascular trunk emerges from the base of the heart instead of the two trunks of aorta and pulmonary artery, one of four developmental anomalies is possible: (*1*) *truncus aorticus solitarius* with atresia of the pulmonary artery; (*2*) complete persistent *truncus arteriosus communis*; (*3*) a partial persistent common trunk where one stem for the right and left pulmonary artery originates from the single trunk; (*4*) *truncus pulmonalis solitarius* with atresia of the aorta. The blood supply of the lungs may come from (*1*) a stem derived from the trunk dividing into a fairly normal right and left pulmonary artery, (*2*) variously sized right and left pulmonary arteries arising directly from the trunk, (*3*) underdeveloped pulmonary arteries arising from the distal (aortic) portion of Botallo's duct, (*4*) narrow supernumerary bronchial arteries arising from the aorta, (*5*) vessels arising from a subclavian artery. A case of right-sided *truncus aorticus solitarius* with heterotopic pulmonary blood supply was studied roentgenographically before death. The absence of the hilar "commas" and deep depression at the site of the pulmonary conus are considered diagnostic signs. They are also found in cases of complete persistent *truncus arteriosus communis* with heterotopic pulmonary blood supply but not in cases of *truncus pulmonalis solitarius* and partial persistent common trunk which are usually associated with normally developed right and left pulmonary arteries.—*Absence of the Hilar Shadow, G. Danelius, Am. J. Roentgenol., June, 1942, 47: 870.*—(*W. H. M.*)

Pulmonary Thrombosis.—In the past sixteen years an antemortem diagnosis of pulmonary thrombosis has been made in 53 patients in whom necropsies subsequently confirmed the diagnosis. Of these patients 41 were men and 12 were women. One-half of them were between the ages of forty-one and sixty years. Cardiovascular lesions were predominant in the clinical and pathological

diagnosis. The onset of pulmonary thrombosis was precipitous in 23 of the patients (43.3 per cent) and gradual in 24 (45.2 per cent); in 6 patients (11.3 per cent) the history did not disclose the mode of onset. Dyspnoea occurred in 48, haemoptysis in 33, apprehension in 16, cough in 13, pain in 13, symptoms of shock in 11 and a profound depression in 5. Suddenly developing cyanosis, which occurred in 60.3 per cent, was the most significant physical sign. The survival period after thrombosis varied from a few minutes to one hundred and forty-two days, but the majority of patients died within ten days. The thrombosis was bilateral in 36 of the patients, right-sided in 9 and left-sided in 8. Infarction had developed in all but 5 patients and 4 of these have died within twelve hours of the time of the accident. Severe abdominal pain and collapse were found 4 times. This pain was lower abdominal as well as epigastric. This particular finding has not previously been disclosed.—*Abdominal Pain in Pulmonary Thrombosis, W. S. Middleton, Ann. Int. Med., March, 1943, 18: 345.*—(*A. A. E.*)

Cor Pulmonale.—The pulmonary circulation is much less frequently affected by disease than is the systemic circulation. Obstruction to the flow of blood through the pulmonary vessels leads to increased pressure within this system. The rise in pressure over a normal of about 20 mm. of mercury causes sclerotic changes in the pulmonary arteries and arterioles and subsequently hypertrophy of the right ventricle. The case reported is that of a patient who was first observed in 1934 with thrombophlebitis in the left leg. He subsequently developed a nonproductive cough and dyspnoea on exertion. In the ensuing years the dyspnoea and cough became more marked and eventually he became cyanotic. The dyspnoea was at all times far greater than any other signs or symptoms of congestive heart failure. Right ventricular hypertrophy was apparent in the roentgenograms and a right axis deviation was noted in the electrocardiogram. There were no signs of pulmonary congestion until very late when left heart failure became a terminal manifestation. At postmortem examination the heart was both dilated and hypertrophied and weighed 560 g. The dilatation involved all chambers but the hypertrophy was confined almost entirely to the right ventricle, the wall of which measured 1 cm. In each main pulmonary artery there was a large firm thrombus. These were determined to be old thrombi in which partial organization had occurred. The large and medium sized branches of the pulmonary artery showed moderate atherosclerosis. It is believed that the earlier episodes of thrombophlebitis were followed by pulmonary emboli, although a definite history of these was not obtained.—*Chronic Cor Pulmonale with Report of a Case, G. W. Covey, Ann. Int. Med., May, 1943, 18: 851.*—(*A. A. E.*)

Pleural Lesions in Haemophilia.—A case of typical haemophilia is reported in which two roentgenographic shadows, one obviously in the pleural cavity in the upper part of the left chest, and the other, a round shadow in the left lower chest, probably within the interlobar septum, are believed to be examples of pleural haemorrhage. Both lesions, present for an observed period of two years, have shown a gradual shrinkage in size.—*Pleural Lesions in Haemophilia, E. P. Pendergrass & E. B. D. Neuhauser, Am. J. Roentgenol., August, 1942, 48: 147.*—(*W. H. M.*)

Pleural Effusion with Fibroma of Ovary.—Meigs' syndrome is the occurrence of pleural effusion and ascites in association with fibroma of the ovary. Two cases are reported by the writer. The reasons for the formation of the fluid are not understood. The fluid is a transudate with a specific gravity of about 1.015. The fluid recurs promptly after tapping and medical treatment is without effect. Operative removal of the pelvic mass effects a complete and permanent cure and the fluid does not recur after operation.—*Pleural Effusion and Ascites in Association with Fibroma of the Ovary, M. Rilvo, Am. J. Roentgenol., August, 1942, 48: 152.*—(*W. H. M.*)

Testing Sarcoidosis with Tuberculins.—The relation of sarcoidosis to tuberculosis has been frequently studied, but little work has been done on the possible aetiological rôle of other mycobacteria. The present article deals with the question, Is sarcoidosis a mycobacterial disease? The cellular reaction in sarcoidosis suggests some sort of a mycobacterial disease, hence, if really due to any of the mycobacterial group besides *M. tuberculosis* one would perhaps expect some hypersensitive manifestation in the skin of these patients when tested with the growth products of the bacillus concerned, prepared like Old Tuberculins. Skin sensitivity tests are thus reported in 7 cases of sarcoidosis. These patients all showed the presence of sarcoid on biopsy, and tubercle bacilli had never been found in any of them either by smear, culture or guinea pig inoculation. Eighteen mycobacterial tuberculins, including tuberculins from *M. butter*, *M. chelonei*, *M. smegmatis*, *M. Johne* etc., together with *M. tuberculosis* were used in the tests together with one control preparation. Usually dilutions of 1:1,000 and 1:100,000 were used, but in some instances 1:100 and 1:10. Five healthy men were tested as controls with *M. Johne*, acid-fast bacilli of cattle skin lesions, *M. chelonei*, *M. smagmatis* and *M. tuberculosis* (OT H37), five "tuberculins" in all; dilutions of 1:100 and 1:1000 were used. The results showed that the patients with sarcoid did not differ significantly from the normal controls in their response to the mycobacterial tuberculins. It so happened that 3 of the 7 patients with sarcoid showed positive reactions to OT (1:1000) and 2 of the 5 healthy controls. In both groups the few responses, mostly weak, to the other mycobacterial tuberculins tended to occur in those reacting to human tuberculin. This is probably a manifestation of the close relationship in the mycobacterial family, for a sensitization to more than one of this group of acid-fast bacilli may occur when an animal is experimentally infected with a specific type. It is thus likely that the patients with sensitivity to mycobacterial tuberculins other than that from *M. tuberculosis* acquired this when they became sensitive to the human tubercle bacillus. The authors conclude that these experiments offer no evidence for, and in fact represent evidence against, the view that the aetiology of sarcoidosis is related to any member of the mycobacterial genus used in the series.—*Skin Sensitivity to Mycobacterium Tuberculins in Sarcoidosis, W. S. Brooke & R. Day, Bull. Johns Hopkins Hosp., February, 1943, 72: 101.*—(*J. S. W.*)

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